

TENT COOPERATION TRE /

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
US Department of Commerce
United States Patent and Trademark
Office, PCT
2011 South Clark Place Room
CP2/5C24
Arlington, VA 22202
ETATS-UNIS D'AMERIQUE
in its capacity as elected Office

Date of mailing (day/month/year) 12 November 2001 (12.11.01)	
International application No. PCT/GB01/00805	Applicant's or agent's file reference J00041819WO
International filing date (day/month/year) 23 February 2001 (23.02.01)	Priority date (day/month/year) 29 February 2000 (29.02.00)
Applicant MULLINS, Dennis, Roy	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:
24 August 2001 (24.08.01)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Pascal Piriou Telephone No.: (41-22) 338.83.38
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(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
7 September 2001 (07.09.2001)

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WO 01/65727 A1

(51) International Patent Classification⁷: **H04B 7/185**

Roy [GB/GB]; 23 Kennington Palace Court, Sancroft Street, London SE11 5UL (GB).

(21) International Application Number: **PCT/GB01/00805**

(22) International Filing Date: 23 February 2001 (23.02.2001)

(74) Agents: **MUSKER, David, Charles et al.**; R.G.C. Jenkins & Co., 26 Caxton Street, London SW1H 0RJ (GB).

(25) Filing Language: **English**

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0004856.1 29 February 2000 (29.02.2000) GB

(84) Designated States (*regional*): European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR).

(71) Applicant (*for all designated States except US*): **ICO SERVICES LIMITED** [GB/GB]; Symphony House, High Street Cowley, Cowley Business Park, Uxbridge, Middlesex UB8 2AD (GB).

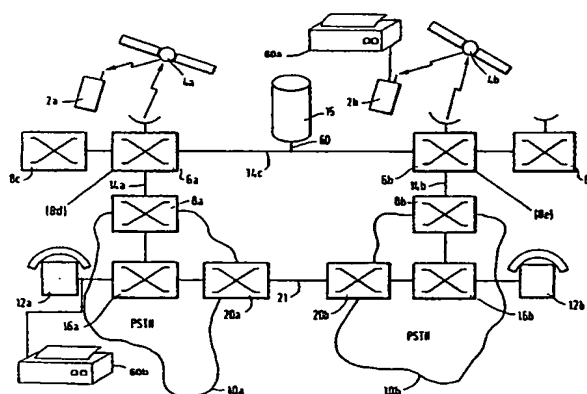
Published:
— with international search report

(72) Inventor; and

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(75) Inventor/Applicant (*for US only*): **MULLINS, Dennis,**

(54) Title: **SATELLITE COMMUNICATIONS WITH SATELLITE ROUTING ACCORDING TO CHANNELS ASSIGNMENT SIGNALS**



(57) Abstract: A satellite system comprising at least one satellite (4); at least one Earth station (6), and a plurality of user terminals (2), the satellite (4) being arranged to provide a link between each user terminal (2) and the Earth station (6), via communications channels, each channel comprising one or more timeslots in a repeating time frame on one or more frequencies, carried by a feeder link beam between said satellite (4) and the or each said Earth station (6), and one of a plurality of user terminal link beams (B1-BN) between the satellite (4) and the user terminals (2), the satellite comprising a multiplexer (211) for multiplexing the channels from multiple said terminal link beams onto each said feeder link beam, and a demultiplexer (111) for demultiplexing the channels from onto each said feeder link beam onto multiple said terminal link beams; and further comprising at least one router (112, 212) for assigning channels to and from particular said terminal link beams in response to control signals from said Earth station (6), characterised in that the Earth station (6) is arranged to send, during a first said frame period, channel assignment signals relating to channel assignments in a following said frame period, and in that the satellite (4) is arranged to control the router (112, 212) in accordance with said channel assignment signals in said following frame period.

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PATENT COOPERATION TREATY

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INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference J00041819W0	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/GB 01/ 00805	International filing date (day/month/year) 23/02/2001	(Earliest) Priority Date (day/month/year) 29/02/2000
Applicant ICO SERVICES LIMITED et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 2 sheets.
☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

**SATELLITE COMMUNICATIONS WITH SATELLITE ROUTING ACCORDING TO CHANNELS
ASSIGNMENT SIGNALS**

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

1
☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

PC 01/00805

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 H04B7/185

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 IPC 7 H04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 2 288 913 A (INT MARITIME SATELLITE ORGANIZ ;INT MOBILE SATELLITE ORG (GB)) 1 November 1995 (1995-11-01) page 11, line 24 -page 15, line 25; figure 3	1-28
A	EP 0 889 605 A (HUGHES ELECTRONICS CORP) 7 January 1999 (1999-01-07) claims 1-10	1-28
A	EP 0 306 918 A (NIPPON ELECTRIC CO) 15 March 1989 (1989-03-15) claims 1-7	1-28

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

° Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

8 document member of the same patent family

Date of the actual completion of the international search

21 May 2001

Date of mailing of the international search report

18/06/2001

Name and mailing address of the ISA

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Authorized officer

Bischof, J-L

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PC 01/00805

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
GB 2288913	A	01-11-1995	AU 2080895 A	10-11-1995
			CN 1148907 A	30-04-1997
			DE 69514650 D	24-02-2000
			DE 69514650 T	13-07-2000
			EP 0756762 A	05-02-1997
			EP 0982803 A	01-03-2000
			WO 9528747 A	26-10-1995
			GB 2324912 A, B	04-11-1998
			JP 10503623 T	31-03-1998
			ZA 9502935 A	21-12-1995
EP 0889605	A	07-01-1999	US 6175719 B	16-01-2001
			CA 2238783 A	25-12-1998
EP 0306918	A	15-03-1989	JP 1071329 A	16-03-1989
			JP 1842421 C	12-05-1994
			JP 5053412 B	10-08-1993
			AU 604206 B	06-12-1990
			AU 2194488 A	16-03-1989
			CA 1291584 A	29-10-1991
			DE 3882464 A	26-08-1993
			US 4901310 A	13-02-1990

REC'D 13 MAR 2002

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference J41819WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB01/00805	International filing date (day/month/year) 23/02/2001	Priority date (day/month/year) 29/02/2000
International Patent Classification (IPC) or national classification and IPC H04B7/185		
Applicant ICO SERVICES LIMITED et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 24/08/2001	Date of completion of this report 07.03.2002
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized officer Bischof, J-L Telephone No. +31 70 340 2607 

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB01/00805

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

1-29 as originally filed

Claims, No.:

1-28 as originally filed

Drawings, sheets:

1/11-11/11 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB01/00805

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-28
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-23,25-28
	No:	Claims	24
Industrial applicability (IA)	Yes:	Claims	1-28
	No:	Claims	

2. Citations and explanations
see separate sheet

1. Reference is made to the following document:
D1: GB-A-2 288 913 (International Mobile Satellite Organization).
2. The present application does not satisfy the criterion set forth in Article 33(3) PCT because the subject-matter of independent claim 24 is not inventive.

Claim 24 discloses a method of TDMA satellite communications with a user terminal, in which the number of slots in a frame in the from-terminal direction is different to that in the to-terminal direction.

This method corresponds to a frame implementation which is obvious in the field of communication. Claim 24 therefore lacks inventive step (Article 33(3) PCT).

3. Although independent system claims 1, 10 and 11 and independent method claims 23 and 24 have been drafted as separate independent claims, they relate to the same subject-matter and differ from each other only with regard to the definition of the subject-matter for which protection is sought in respect of the terminology used for the features of that subject-matter. The aforementioned claims therefore lack conciseness. Moreover, lack of clarity of the claims as a whole arises, since the difference of subject-matter between the two independent claims makes it difficult to determine the matter for which protection is sought.

Hence, claims 1, 10, 11, 23 and 24 do not meet the requirements of Article 6 PCT.

In order to overcome this objection, it would have been appropriate to file an amended set of claims defining the relevant subject-matter in terms of a single independent system and a single independent method claim with identical subject-matter followed by dependent claims covering features which are merely optional (Rule 6.4 PCT).

This would as well avoid non-unity objections (Rule 13.1 PCT).

4. To meet the requirements of Rule 5.1(a)(ii) PCT, the document D1 should have been identified in the description and the relevant background art disclosed therein should have been briefly discussed.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB01/00805

5. It would have been appropriate to draft the independent claims in the two part form as required by Rule 6.3(b) PCT, whereby the features known from D1 should have been placed in the preamble.
6. Reference signs in parentheses should have been inserted in the claims to increase their intelligibility, Rule 6.2(b) PCT. This applies to both the preamble and characterising portion.
7. In order to fulfil the requirements of Rule 5.1(a)(iii) PCT, the description should have been brought into conformity with the new claims.
